UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF

12 SEP 1989

Mr. Vincent Lopez
Environmental Engineer
Department of the Air Force
1114 Commerce Street
Dallas, Texas 75242-0216

Dear Mr. Lopez:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act, and Executive Order 12088, the Region V Office of the United States Environmental Protection Agency (U.S. EPA) has reviewed the Final Installation Restoration Program (IRP), Phase II, Stage 2 Report for the Air Force Plant 85, Columbus, Ohio.

Based upon a review of the information that you have provided, we have concerns regarding the surface water, ground water, drinking water and sampling and analysis quality assurance issues. Provided as an enclosure is a complete listing of these concerns.

Thank you for the opportunity to review this final Work Plan. If you have any questions regarding our comments, please contact Anthony H. Holoska, P.E. of my staff at (312) 886-7503.

Sincerely yours,

Kestutis K. Ambrutas

for William D. Franz, Chief
Environmental Review Branch
Planning and Management Division

Enclosure

Environmental Protection Agency - Region 5's
Comments on the Phase 2, Stage 2 Work
Plan for Air Force Plant No. 85, Columbus, Ohio

Surface Water Comments

The analysis of surface water drainage at Air Force Plant 85 (AFP 85) remains incomplete. While there is a potential for significant contamination of the Turkey Run drainage area due to surface runoff over contaminated soils, no sampling has been done for Turkey Run, nor is any planned in the work plan. If there is an explanation for not analyzing this surface water and potential contamination pathway, it has not been presented in the documents reviewed thus far.

In identifying the water quality-related ARARs for this site, Table 4.5-1 lists Federal water quality criteria, but not Ohio's water quality criteria. The latter are the appropriate measures of surface water quality.

Related to the comment above, assessing the extent of oil and grease contamination in Mason Run sediments, the Ohio Water Quality Standards (Ohio Administrative Code, Chapter 3745-1-07) contain water quality criteria for oil and grease which must be met in receiving streams and sediments. The work plan stated that no applicable criteria existed for oil and grease in sediments.

Ground Water Comments

Section 5.3.1.5, Plant Perimeter, states that nested wells will be installed, and that the shallow wells in the nests will be screened to take into account seasonal fluctuations. However, the plan states that these wells are only going to be sampled once. We recommend a minimum of two rounds of sampling for all new monitoring wells. This is particularly important for nests of wells installed, so that seasonal variations can be monitored.

Drinking Water Comments

Page 4-11, Table 4.3-1: Under the last column entitled, Drinking Water MCL, the Table shows NSA or No Standard Available for Sulfate and Total Dissolved Solids. However there is a secondary maximum contaminant level (SMCL), for Sulfate of 250 mg/L, and a SMCL for Total Dissolved Solids of 500 mg/L. The SMCLs were established setting recommended limits for the aesthetic qualities of water, but they are not Federally enforceable.

Page 4-12, Table 4.3-1 cont'd: Under the last column, entitled Drinking Water MCL,

- The Table shows NSA for Trichloroethane (1, 1, 1 isomer), however, a maximum contaminant level (MCL) of 0.200 mg/L was established for 1, 1, 1 Trichloroethane effective January 9, 1989.

- The Table shows NSA for Dichloroethane (1,2 isomer), however, a MCL of 0.005 mg/L was established for 1,2 Dichloroethane effective January 9, 1989.

- The Table shows NSA for Trichloroethene, however, a MCL of 0.005 mg/L was established for Trichloroethene effective January 9, 1989.

- The Table shows NSA for Chromium and for Chromium (Hexavalent), and 0.05 mg/L for Chromium (Trivalent). The MCL of 0.05 mg/L should be shown for Chromium instead of Chromium (Trivalent) because the MCL does not distinguish between the Hexavalent and Trivalent forms.

Page 4-25, Table 4.5-1: Under the last column entitled, Safe Drinking Water Act, Health Advisories, the 1-day, 10-day and chronic (longer term) values should be revised for the following chemicals as shown below.

	Safe Drinking Water Act, Health Advisories (mg/L)		
Chemical	1-day	2-day	Chronic (longer term)
1, 2 Dicloroethane	0.7	0.7	0.7
1,1,1 Trichlorethane	100.0	40.0	40.0
Polychlorinated biphenyls (PCBs)	_____	_____	0.001
Toluene	20.0	3.0	3.0
Trichloroethene	_____	_____	_____

PCB Comments

Section 4.6 Data Requirements 4.6.1.2 Sampling Plans (p. 4-27) states that water and sediment samples will be collected to determine if contamination is increasing in Mason's Run as it crosses the plant and to determine if surface runoff has contaminated the creek downstream of the PCB Spill Site (Site #3).

Section 5.3.2s Evaluation of Alternatives (p. 5-47) outlines the investigative actions to define the extent and magnitude of PCB contamination at PCB Spill Site #3. However, the investigative actions to be taken at Mason's Run (p. 5-48) do not explicitly state that investigative actions will be undertaken to identify the presence of PCBs in the stream's sediments. We recommend water and sediment samples from Mason's Run be analyzed for the presence of PCBs to determine whether migration of PCBs from Site #3 has taken place and if long-term monitoring of groundwater is necessary.

Quality Assurance Project Plan (QAPjP) Comments

The following specific comments are consistent with U.S. EPA's recommended format

Title Page

Include a title page with provision for approval signatures including the following parties: USAF Project Manager, USAF QA Officer, Remedial Contractor (Battelle) Project Manager, Remedial Contractor QA Officer, USEPA Region V Environmental Review Branch, and USEPA Region V Quality Assurance Officer. If the State of Ohio will play a significant role and must approve the QAPjP, a space should be included for the State as well.

Table of Contents

The QAPjP and associated documents should be prepared with a document control format consisting of the following information in the upper right hand corner of each page:

- 0 Document name
- 0 Section number
- 0 Revision number (initial draft is Revision 0)
- 0 Revision date
- 0 Page number (page __ of __)

1.1f Introduction

Identify the phase and stage of the project as Phase II Stage 2.

1.2 Project Description
1.2.1 Site Description
1.2.2 Site Investigation History.

To avoid reiteration and inconsistency, reference the appropriate sections of the Work Plan which contains this information. As indicated in the above comments, further detail of the rationale of Phase I site scoring and Phase II Stage 1 sampling & analysis location selection must be included.

1.2.3 Site Recommendations.

This section attempts to combine several Project Description subelements and shortchanges each. These should be separately discussed under the following subelements:

- 0 Target Compounds: summarizing important site contaminants and proposed target compounds with required detection limits for this remedial investigation.

- 0 Project objectives: separately discussing the overall site Specific Objectives, the Intended Data Usages which relate each piece of data to a Specific Objective, and the Data Quality Objectives (DQOs) which indicate the level of data quality required.

- 0 Sample Network & Rationale: including diagrams of all sampling locations (which may be referenced from other QAPjP/Work Plan sections), short rationale of all sampling locations (including specific locations as well as number of samples) and a table listing all matrices, parameters, and frequency of investigative and QC samples collected (which may be referenced, with modification from other QAPjP/WP sections).

- 0 Project Schedule: reference form other QAPjP/WP sections.

1.3 Project Organization and Responsibility.

a) Specify who will perform data validation, data assessment, and all parties responsible for QAPjP review & approval.

b) Define the role of the USEPA Region V and state regulatory agencies and include in the text and figure. USEPA Region V will provide review of the QAPjP through the Environmental Review Branch (Planning and Management Division). The Quality Assurance Section (Environmental Sciences Division) will provide QAPjP comments/approval to the Environmental Review Branch.

c) Specify if external performance and systems audits will be conducted by the USAF of its remedial contractor/subcontractor laboratories. See further comments under 1.11 below.

d) If the two Brown & Cladwell laboratories will be used for this project, specify the location and responsibility of each lab.

1.4 Quality Assurance Objectives for Measurement Data.

a) Provide separate discussions of QA objectives as they relate to field and laboratory measurements/analyses.

b) The section 1.4.6 (Quality Control Samples) should be integrated into the separate field and lab discussion to demonstrate concrete means used to measure each QA objective. For laboratory QA, prepare separate discussions for organic versus inorganic analyses since some QC is not applicable (i.e. matrix spike duplicates for inorganic).

c) For consistency, rename "equipment blanks" as field blanks. Define the following: ambient condition blanks and lab control standards.

1.5 Sampling Procedures.

Primary comments will be detailed under section 2.0 comments below. The following should be addressed:

a) Information which follows page 1-28 should be integrated into section 2.0 related to sampling procedures; information related to Sample Network and Rationale (i.e. Tables 1.5.1/1.5.2) may be included in the Project Description.

b) Tables 1.5.1/1.5.2 should include columns for matrix spikes, ensure that field duplicates are sampled for every 10 investigative samples of the same matrix (i.e. 32 samples requiring 4 not 3 field duplicates), and a breakdown of columns of field versus lab measurements/analyses.

1.6 Sample Custody.

a) Detailed field and laboratory custody procedures in stepwise fashion should be included. These shall detail field custody from sample collection, field measurements/screening, and shipping or disposal. Lab custody shall detail receiving, log-in custody transfers during preparation & analysis, storage and/or disposal.

b) Define the contents of the final evidence file and who will act as custodian. Will original data (i.e. magnetic disks from GC/MS be retained by the analytical lab? If yes, how will it be stored and for how long?

c) Section 1.6.2 (Sample Identification) should provide clear means in the numbering system for the identification of QC sample types. Soil borings cuts from the same location (different depths) should also be included in coded form in the numbering system.

d) Section 1.6.2.4 (Photographs) should also indicate how sample locations will be documented/described (distance/direction relative to immovable objects, permanent location marking, coordinate system etc.).

1.7 Calibration Procedure and Frequency.

Include stepwise protocols for calibrations of field and lab equipment. A copy of the USEPA Region guidelines for standard operating procedures (SOP) preparation is attached to this review.

1.7.1 Field Equipment.

a) What calibration points and compounds are used to calibrate the HNU? OVA appears to include only a single point. It is recommended that a multipoint initial calibration be routinely analyzed and a single point continuing calibration check be conducted prior to and during daily analyses.

b) pH calibration includes only acid/neutral pH buffers but should include a basic buffer calibration as well.

c) Conductivity and temperature should have calibration checks as well on a routine basis.

d) Additionally include references to the manufacturer's operating manual (title/revision) but include SOP specific instructions.

1.7.3 Laboratory Method Calibration Procedures.

Again, full DOPs should be included for calibration. These may be a section of the analytical SOPs (see 1.8 comments) but do not merely reference a "standard" method number. The SOPs should detail how a lab actually performs a method in a "cookbook", stepwise fashion.

1.8 Analytical Procedures.

1.8.1 Standard Methods

As indicated under section 1.7 comments, all field and lab methods must be in SOP form and attached to the QAPjP. Citing "standard" method numbers is not sufficient.

1.8.2 Detection Limits.

a) The above analytical SOPs should include how detection limits were verified by the laboratory (i.e. were spikes meeting all qualitative criteria successfully analyzed at these levels?) In addition, do the detection limits included meet the project data quality objectives?

b) Specify which methods will be used for volatile organics. Listings include SW 8010, 8020, and 8240.

1.9 Data Reduction, Validation and Reporting.

Each of the three subjects should be discussed relative to field/Battelle and laboratory measurements/analyses.

1.9.1 Data Reduction.

a) Discuss/reference calculations used in the field to reduce raw data to final results.

b) Laboratory analytical SOPs which should be attached to the QAPjP may contain information on laboratory data reduction and referenced in this section. Additionally, incorporate section 1.9.4 into this discussion.

1.9.2 Data Validation.
1.9.3 Data Quality Review.

Summarize and attach the SOPs used to validate field and laboratory data. There is a clear distinction between validation and assessment. Validation is the process of qualifying data against QC criteria while assessment examines validated data against overall QA objectives. Examples of documents used to validate data is the "Laboratory Data Validation Functional Guidelines for Evaluating Organic analyses" USEPA, February 1988 and the parallel inorganic document of July 1988 which are commonly used to validate Contract Laboratory Program data. The SOPs used to validate data for this project should take into account the actual field and lab analyses.

1.9.5 Data Reporting.

Specify the field and laboratory data reporting deliverables. What forms, raw data, spread sheets etc. will be included?

1.10 Internal Quality Control Checks.

1.10.1 Quality Control Checks for Field Activities.

Field duplicates should be included in this discussion since the primary purpose is to examine sampling precision although through analysis it is a measure of field and lab precision.

1.11 Performance and Systems Audits.

a) Both external and internal audits should be described. The audits discussed are internal in nature, focussing in on audits conducted by Battelle and its subcontractor. Specify field and laboratory audits conducted by the USAF which are external in nature.

b) Sections 1.11.3.2 and 1.11.3.4 discuss the laboratory's participation in WP and WS performance audits. These audits may be limited in applicability to this specific project due to the difference of parameters and detection limits. The WS and WP studies do not include systems/chain-of-custody studies may also include similar problems.

c) Section 1.11.3.3 indicates that two Brown & Caldwell lab locations may be used for the project. SOPs, detection limits etc., must be included for each laboratory's responsibilities.

1.12 Preventative Maintenance.

Separately prepare separate sections on field and lab instruments. Appropriately reference analytical SOPs if specific maintenance instructions are included in those SOPs. Table 1.12 addresses field equipment only.

1.13 Corrective Action.

a) Separately discuss corrective action mechanisms as they apply to field activities, lab activities, and validation & assessment activities. Indicate the hierarchy for recommending and initiating corrective action.

b) The USAF should be included in the corrective action hierarchy being responsible for overall management. This level of involvement is especially important when resampling/reanalysis is required with project delays or for instance when less than requires % completeness may be anticipated.

1.14 Quality Assurance Reports to Management.

Specify which parties responsible for overall management including USAF will receive/review QA reports. These reports should additionally describe QA problems and proposed corrective actions such as QAPjP/Work Plan modifications.

The following Sampling Plan comments should also be addressed:

2.0 Methods Protocols.

2.3 Well Installation.

PVC well casings should not be used since PVC may be attacked/permeated by organic chemicals which may be found on site. Stainless steel is highly recommended.

2.4 Sample Collection.

As a general comment concerning sampling of all matrices, specify, in detail, how investigative versus duplicates, spikes, blanks etc., are filled in sample bottles. For example, are water duplicates taken as separate aliquots from the same bailer (if a bailer is used)? Also indicate the order that samples are taken for each analytical parameter.

2.4.1 Groundwater and Surface Water Samples.
Which method of sampling will actually be used: pumps or bailers?

2.4.1.4 Presample Purging.
Purge water must not be disposed near the well head to avoid problems with recharge rates which can be adversely affected.

2.4.1.8 Sampling Surface Water...
What depth is water taken for surface water samples?

2.4.2 Soil Sampling.
Specify which method will actually be used for sampling: spade/spoon, split barrel or auger borings.

2.4.5 Decontamination of Sampling Equipment.

a) Describe in stepwise fashion equipment decontamination.

b) The abbreviated description appears to end with a hexane rinse. This is unsatisfactory since this leaves residue in volatile analyses. Hexane should be deleted; end with methanol followed by distilled water rinses.

TH/#1Plant85/hk 8-21-89

APPROVED OPERATING PLAN

BY ALLOWANCE HOLDERS & OBJECT CLASS

RPIO 05 REGIONAL ADMINISTRATOR
AH 05 REGION 05 CHICAGO
ABATEMENT AND CONTROL
FY 89

PROGRAM SUB-ELEMENT NUMBER	TITLE	QTR1 $1000	QTR2 $1000	QTR3 $1000	QTR4 $1000	TOTAL $1000	QTR1 POS	QTR2 POS	QTR3 POS	QTR4 POS	TOTAL POS
		QUARTERLY OPERATING PLAN									
B65C2C	05	HB PUB WTR SYS SUPER PROG GRANTS									
42 TRAVEL			22,300			22,300					
44 RENT, COMM			25,600			25,600					
46 OTH CONTR SE			45,500			45,500					
47 SUPPL & MATL			2,000			2,000					
48 EQUIPMENT					50,000	50,000					
62 PROG CONTRA			28,000			28,000					
63 ADP CNTRT SE											
72 PG GTS			4,699,500	264,100	214,300	5,177,900					
TOTAL			4,822,900	264,100	264,300	5,351,300					
B66C2C	05	HC UNDERGND INJ CONT PROG GRANTS									
42 TRAVEL											
44 RENT, COMM			9,100			9,100					
45 PRNT & REPRO			16,700			16,700					
46 OTH CONTR SE			33,000			33,000					
47 SUPPL & MATL			1,800			1,800					
48 EQUIPMENT			23,000			23,000					
62 PROG CONTRA			465,000			465,000					
72 PG GTS			777,700	66,700	66,900	911,300					
TOTAL			1,326,300	66,700	66,900	1,459,900					
BGDD3A	05	GD HAZARDOUS WASTE ENFORCEMENT									
62 PROG CONTRA			3,031,700	168,100	168,200	3,368,000					
72 PG GTS											
TOTAL			3,031,700	168,100	168,200	3,368,000					
BNCD2C	05	GW UNDERGND STOR TANKS STATE GRAN									
72 PG GTS			877,500	92,700	88,800	1,059,000					
TOTAL			877,500	92,700	88,800	1,059,000					
B77D2C	05	GF TOXIC SUBSTANCE ENF									
72 PG GTS			12,012,000	662,300	662,500	13,336,800					
TOTAL			12,012,000	662,300	662,500	13,336,800					
B80D2D	05	GD HAZ WST MGT REG STRAT IMPLEMN									
62 PROG CONTRA			673,200	70,600	24,700	768,500					
72 PG GTS			128,042			128,042					
73 OTH GRANTS			20,858			20,858					
TOTAL			822,100	70,600	24,700	917,400					
BFJE3A	05	EA PESTICIDES ENFORCEMENT GRANTS									
72 PG GTS			1,115,500	61,900	62,100	1,239,500					

APPROVED OPERATING PLAN

BY ALLOWANCE HOLDERS & OBJECT CLASS

RPIO 05 REGIONAL ADMINISTRATOR
AH 05 REGION 05 CHICAGO
ABATEMENT AND CONTROL
FY 89

PROGRAM SUB-ELEMENT NUMBER		TITLE	QUARTERLY OPERATING PLAN QTR1 $1000	QTR2 $1000	QTR3 $1000	QTR4 $1000	TOTAL $1000	QTR1 POS	QTR2 POS	QTR3 POS	QTR4 POS	TOTAL POS
TOTAL				1,115,500	61,900	62,100	1,239,500					
BJRE2M	05	EA GENERIC CHEMICAL REVIEW										
62 PROG CONTRA				25,000			25,000					
TOTAL				25,000			25,000					
B8XE3A	05	EA PESTICIDES CERT & TRAIN GRANTS										
72 PG GTS				251,000			251,000					
TOTAL				251,000			251,000					
3SZF2R	05	99 RADON ACTION PROGRAM										
72 PG GTS				20,000			20,000					
TOTAL				20,000			20,000					
BKKH2A	05	99 ENVIRON REVIEW & COORDINATION										
61 IAG AGREEMNT				27,300			27,300					
62 PROG CONTRA				128,300	15,000	13,900	157,200					
72 PG GTS				14,400			14,400					
TOTAL				170,000	15,000	13,900	198,900					
B8TL3A	05	TB TOXIC SUBSTANCE ENFORCEMENT										
72 PG GTS				473,400			473,400					
TOTAL				473,400			473,400					
BUXS5A	05	99 STATE EPA DATA MGT PROJECT										
62 PROG CONTRA				90,000			90,000					
TOTAL				90,000			90,000					
				64,177,900	2,824,700	2,722,000	69,724,600					

APPROVED OPERATING PLAN

BY ALLOWANCE HOLDERS & OBJECT CLASS

RPIO 05 REGIONAL ADMINISTRATOR
AH 05 REGION 05 CHICAGO
ABATEMENT AND CONTROL
FY 89

PROGRAM SUB-ELEMENT NUMBER		TITLE	QUARTERLY OPERATING PLAN QTR1 $1000	QTR2 $1000	QTR3 $1000	QTR4 $1000	TOTAL $1000	QTR1 POS	QTR2 POS	QTR3 POS	QTR4 POS	TOTAL POS
B17A2C	05	DD CONT AGEN RES (SEC 105 GRANTS)										
72 PG GTS			17,571,800	458,500		438,500	18,468,800					
TOTAL			17,571,800	458,500		438,500	18,468,800					
B20A2D	05	DD AIR QUALITY MANAGEMENT IMPLEM.										
72 PG GTS			26,800				26,800					
TOTAL			26,800				26,800					
B23A2F	05	DD AMBIENT AIR QUALITY MONITORING										
72 PG GTS			17,800				17,800					
TOTAL			17,800				17,800					
BGMB2D	05	BA DREDGE AND FILL										
62 PROG CONTRA												
72 PG GTS			16,000				16,000					
TOTAL			16,000				16,000					
B42B2A	05	BA GREAT LAKES PROGRAM										
61 IAG AGREEMNT			3,600,000	200,000		185,800	3,985,800					
62 PROG CONTRA			4,800,000	100,000		82,100	4,982,100					
63 ADP CNTRT SE												
70 RESEARCH GNT			231,000	12,800		12,000	255,800					
72 PG GTS			1,620,000	90,000		90,000	1,800,000					
TOTAL			10,251,000	402,800		369,900	11,023,700					
B47B2C	05	BH CONT AGEN RES SUPPL (SEC 106)										
72 PG GTS			10,989,600	560,800		560,900	12,111,300					
TOTAL			10,989,600	560,800		560,900	12,111,300					
B53B2F	05	BA WATER QUALITY MONITOR & ANAL.										
62 PROG CONTRA			10,000				10,000					
TOTAL			10,000				10,000					
B54B2G	05	B4 MUN. WST TRTMNT FAC. CONSTRUCT										
72 PG GTS												
73 OTH GRANTS			235,000				235,000					
TOTAL			235,000				235,000					
BMMC2E	05	99 GROUND-WATER PROTECTION										
61 IAG AGREEMNT			12,700				12,700					
72 PG GTS			9,800	1,200		1,300	12,300					
TOTAL			22,500	1,200		1,300	25,000					